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Sequence Listing was accepted.

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Reviewer: Anne Corrigan

Timestamp: [year=2009; month=7; day=14; hr=10; min=1; sec=37; ms=858; ]

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Application No: 10536705 Version No: 1.0

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**Output Set:**

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**No. of SeqIDs Defined:** 23  
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SEQUENCE LISTING

<110> Montelione, Gaetano

Das, Kalyan

Arnold, Eddy

<120> Ribosomal RNA Methyltransferases Rima: Target Validation and Processes for Developing an Inhibitor Assay and Identification of Candidate Inhibitors

<130> 70439.00003

<140> 10536705

<141> 2009-06-29

<150> PCT/US04/20244

<151> 2004-06-26

<150> US 60/482,722

<151> 2003-06-27

<160> 23

<170> PatentIn version 3.4

<210> 1

<211> 269

<212> PRT

<213> Escherichia coli

<400> 1

Met Ser Phe Ser Cys Pro Leu Cys His Gln Pro Leu Ser Arg Glu Lys  
1 5 10 15

Asn Ser Tyr Ile Cys Pro Gln Arg His Gln Phe Asp Met Ala Lys Glu  
20 25 30

Gly Tyr Val Asn Leu Leu Pro Val Gln His Lys Arg Ser Arg Asp Pro  
35 40 45

Gly Asp Ser Ala Glu Met Met Gln Ala Arg Arg Ala Phe Leu Asp Ala  
50 55 60

Gly His Tyr Gln Pro Leu Arg Asp Ala Ile Val Ala Gln Leu Arg Glu  
65 70 75 80

Arg Leu Asp Asp Lys Ala Thr Ala Val Leu Asp Ile Gly Cys Gly Glu  
85 90 95

Gly Tyr Tyr Thr His Ala Phe Ala Asp Ala Leu Pro Glu Ile Thr Thr  
100 105 110

Phe Gly Leu Asp Val Ser Lys Val Ala Ile Lys Ala Ala Ala Lys Arg  
115 120 125

Tyr Pro Gln Val Thr Phe Cys Val Ala Ser Ser His Arg Leu Pro Phe  
130 135 140

Ser Asp Thr Ser Met Asp Ala Ile Ile Arg Ile Tyr Ala Pro Cys Lys  
145 150 155 160

Ala Glu Glu Leu Ala Arg Val Val Lys Pro Gly Gly Trp Val Ile Thr  
165 170 175

Ala Thr Pro Gly Pro Arg His Leu Met Glu Leu Lys Gly Leu Ile Tyr  
180 185 190

Asn Glu Val His Leu His Ala Pro His Ala Glu Gln Leu Glu Gly Phe  
195 200 205

Thr Leu Gln Gln Ser Ala Glu Leu Cys Tyr Pro Met Arg Leu Arg Gly  
210 215 220

Asp Glu Ala Val Ala Leu Leu Gln Met Thr Pro Phe Ala Trp Arg Ala  
225 230 235 240

Lys Pro Glu Val Trp Gln Thr Leu Ala Ala Lys Glu Val Phe Asp Cys  
245 250 255

Gln Thr Asp Phe Asn Ile His Leu Trp Gln Arg Ser Tyr  
260 265

<210> 2  
<211> 269  
<212> PRT  
<213> *Salmonella typhimurium*

<400> 2

Met Ser Phe Thr Cys Pro Leu Cys His Gln Pro Leu Thr Gln Ile Asn  
1 5 10 15

Asn Ser Val Ile Cys Pro Gln Arg His Gln Phe Asp Val Ala Lys Glu  
20 25 30

Gly Tyr Ile Asn Leu Leu Pro Val Gln His Lys Arg Ser Arg Asp Pro  
35 40 45

Gly Asp Ser Ala Glu Met Met Gln Ala Arg Arg Ala Phe Leu Asp Ala  
50 55 60

Gly His Tyr Gln Pro Leu Arg Asp Ala Val Ile Asn Leu Leu Arg Glu  
65 70 75 80

Arg Leu Asp Gln Ser Ala Thr Ala Ile Leu Asp Ile Gly Cys Gly Glu  
85 90 95

Gly Tyr Tyr Thr His Ala Phe Ala Glu Ala Leu Pro Gly Val Thr Thr  
100 105 110

Phe Gly Leu Asp Val Ala Lys Thr Ala Ile Lys Ala Ala Ala Lys Arg  
115 120 125

Tyr Ser Gln Val Lys Phe Cys Val Ala Ser Ser His Arg Leu Pro Phe  
130 135 140

Ala Asp Ala Ser Met Asp Ala Val Ile Arg Ile Tyr Ala Pro Cys Lys  
145 150 155 160

Ala Gln Glu Leu Ala Arg Val Val Lys Pro Gly Gly Trp Val Val Thr  
165 170 175

Ala Thr Pro Gly Pro His His Leu Met Glu Leu Lys Gly Leu Ile Tyr  
180 185 190

Asp Glu Val Arg Leu His Ala Pro Tyr Thr Glu Gln Leu Asp Gly Phe  
195 200 205

Thr Leu Gln Gln Ser Thr Arg Leu Ala Tyr His Met Gln Leu Thr Ala  
210 215 220

Glu Ala Ala Val Ala Leu Leu Gln Met Thr Pro Phe Ala Trp Arg Ala  
225 230 235 240

Arg Pro Asp Val Trp Glu Gln Leu Ala Ala Ser Ala Gly Leu Ser Cys  
245 250 255

Gln Thr Asp Phe Asn Leu His Leu Trp Gln Arg Asn Arg  
260 265

<210> 3  
<211> 279  
<212> PRT  
<213> Yersinia pestis

<400> 3

Met Ser Tyr Gln Cys Pro Leu Cys His Gln Ala Leu Gln Leu Ser Gln  
1 5 10 15

Gln Gln Trp Cys Cys Ser Asn Asn His Gln Phe Asp Cys Ala Lys Glu  
20 25 30

Gly Tyr Val Asn Leu Met Pro Val Gln His Lys Gly Ser Lys Gln Pro  
35 40 45

Gly Asp Ser Pro Glu Met Met Gln Ala Arg Arg Ala Phe Leu Asp Ala  
50 55 60

Gly Tyr Tyr Gln Pro Leu Gln Gln Arg Val Ser Glu Ile Leu Asp Glu  
65 70 75 80

Ala Leu Pro Leu Asp Ala Thr Arg Leu Leu Asp Ile Gly Cys Gly Glu  
85 90 95

Gly Tyr Tyr Thr Ala Ala Val Ala Asp Arg Leu Asn Lys Leu Arg Gln  
100 105 110

Met Ala Ile Phe Gly Leu Asp Val Ala Lys Val Ala Val Arg Tyr Gly  
115 120 125

Ala Lys Arg Tyr His Gln Val Asn Phe Cys Val Ala Ser Ser His Arg  
130 135 140

Leu Pro Phe Ala Asn Gly Ala Leu Asp Ala Val Leu Arg Ile Tyr Ala  
145 150 155 160

Pro Cys Lys Ala Val Glu Leu Ala Arg Thr Val Lys Pro Gly Gly Ile  
165 170 175

Val Val Thr Val Ala Pro Gly Pro Arg His Leu Tyr Gln Leu Lys Ala

180

185

190

Leu Ile Tyr Ala Gln Val Gln Leu His Asp Asp Thr Glu Glu His Leu  
195 200 205

Asp Gly Phe Glu Leu Ile Arg Arg Glu Thr Leu Ala Tyr Asp Met Lys  
210 215 220

Leu Thr Gly Glu Gln Gly Phe Asn Leu Leu Gln Met Thr Pro Phe Ala  
225 230 235 240

Trp Arg Ala Ser Val Asp Thr Gly Gln Lys Leu Ala Ala Gln Pro Ser  
245 250 255

Phe Ser Cys Glu Thr Asp Phe Val Ile Ser Leu His Arg Arg Lys Thr  
260 265 270

Asp Asn Pro Gln Asn Asp Ile  
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<210> 4

<211> 278

<212> PRT

<213> Vibrio cholerae

<400> 4

Met Leu Ile Glu Thr Thr Met Thr Phe Leu Cys Pro Leu Cys Glu His  
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Pro Leu Thr Leu Asn Gln Asn Thr Tyr Ala Cys Ile Asn Arg His Gln  
20 25 30

Phe Asp Val Ala Lys Glu Gly Tyr Val Asn Leu Met Pro Val Gln His  
35 40 45

Lys Arg Ser Lys Asp Pro Gly Asp Asn Lys Glu Met Thr Gln Ala Arg  
50 55 60

Arg Arg Phe Leu His Thr Gly His Tyr Ala Pro Met Arg Glu Lys Val  
65 70 75 80

Ala Thr Leu Cys Gln Thr Tyr Leu Thr Gly Arg Gln Gln Thr Leu Leu  
85 90 95

Asp Ile Gly Cys Gly Glu Gly Tyr Tyr Thr Asp Phe Phe Ala Lys Ala  
100 105 110

Leu Ser Gln Gln Asp Ser Glu Ala Gln Ile Leu Gly Leu Asp Ile Ser  
115 120 125

Lys Ile Ala Ile Arg Tyr Ala Ala Lys Arg Tyr Pro Glu Cys Gln Phe  
130 135 140

Ala Val Ala Ser Ser His Arg Leu Pro Phe Ala Asn Gln Ser Leu Asp  
145 150 155 160

Gly Val Ile Arg Ile Tyr Ala Pro Cys Lys Asp Thr Glu Leu Glu Arg  
165 170 175

Cys Ile Lys Ile Gly Gly Ile Val Ile Thr Val Thr Pro Ala Ala Arg  
180 185 190

His Leu Tyr Gln Phe Lys Gln Gly Ile Tyr Asp Gln Val Arg Leu His  
195 200 205

Glu Glu Gln Pro Glu Thr Leu Ser Gly Phe Glu Leu Val Glu Glu Cys  
210 215 220

Lys Leu His Tyr Pro Met Ala Leu Asn Gly Ser Glu Ala Ala Asp Leu  
225 230 235 240

Leu Gln Met Thr Pro Phe Ala Trp Arg Ala Ser Glu Asp Phe Lys His  
245 250 255

Arg Val Ser Gln Ser Asp Thr Phe Glu Cys Glu Ala Asp Phe Met Leu  
260 265 270

Arg Val Tyr Arg Arg Lys  
275

<210> 5  
<211> 270  
<212> PRT  
<213> Pseudomonas putida

<400> 5

Met Leu Ala Cys Pro Leu Cys Gln Ala Pro Leu Ser Arg Leu Asp Asn

1 5 10 15

Gly Val Val Cys Pro Ala Gly His Arg Phe Asp Arg Ala Arg Gln Gly  
20 25 30

Tyr Leu Asn Leu Leu Pro Val Gln His Lys Asn Ser Arg Asp Pro Gly  
35 40 45

Asp Asn Gln Ala Met Val Glu Ala Arg Arg Asp Phe Leu Asp Ala Gly  
50 55 60

His Tyr Ala Pro Val Ala Arg Arg Leu Ala Glu Leu Ala Ala Glu Arg  
65 70 75 80

Gln Pro Gly Ala Trp Leu Asp Ile Gly Cys Gly Glu Gly Tyr Tyr Thr  
85 90 95

Ala Gln Ile Ala Gln Ala Leu Pro Ala Ala Asp Gly Tyr Ala Leu Asp  
100 105 110

Ile Ser Arg Glu Ala Val Lys Arg Ala Cys Arg Arg Ala Ser Ala Val  
115 120 125

Thr Trp Met Val Ala Ser Met Ala Arg Val Pro Leu Thr Asp Ala Ser  
130 135 140

Cys Gln Phe Ile Ala Ser Val Phe Ser Pro Leu Asp Trp Ala Glu Ala  
145 150 155 160

Lys Arg Leu Leu Ser Pro Gly Gly Leu Met Arg Val Gly Pro Thr  
165 170 175

Ser Gly His Leu Met Glu Leu Arg Glu Val Leu Tyr Asp Glu Val Arg  
180 185 190

Pro Tyr Ala Asp Asp Lys His Leu Ala Leu Val Pro Glu Gly Met Ala  
195 200 205

His Ala His Ser Glu Thr Leu Glu Phe Arg Leu Ser Leu Ala Ala Pro  
210 215 220

Lys Ala Arg Ala Asp Leu Leu Ala Met Thr Pro His Gly Trp Arg Ala  
225 230 235 240

Ser Ala Glu Lys Arg Ala Arg Val Ile Asp Gln Pro Glu Pro Phe Glu  
245 250 255

Val Thr Val Ser Met Arg Tyr Asp Tyr Phe Val Arg Gln Asp  
260 265 270

<210> 6  
<211> 267  
<212> PRT  
<213> Pseudomonas aeruginosa

<400> 6

Met Leu Ile Cys Pro Leu Cys Ser Ala Ala Leu Gly Thr Val Asp Asn  
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Gly Val Ala Cys Pro Ala Gly His Arg Phe Asp Arg Ala Arg Gln Gly  
20 25 30

Tyr Leu Asn Leu Leu Pro Val Gln His Lys Lys Ser Leu Asp Pro Gly  
35 40 45

Asp Asn Ala Ala Met Val Glu Ala Arg Arg Gln Phe Leu Gly Ala Gly  
50 55 60

His Tyr Ala Pro Leu Ala Arg Arg Leu Ala Glu Leu Ala Ala Glu Arg  
65 70 75 80

Ala Pro Arg Arg Trp Leu Asp Ile Gly Cys Gly Glu Gly Tyr Tyr Ser  
85 90 95

Ala Gln Leu Gly Glu Ala Leu Gly Asp Ala Glu Gly Tyr Ala Leu Asp  
100 105 110

Ile Ser Arg Glu Ala Val Lys Arg Ala Cys Arg Arg Ala Pro Gln Leu  
115 120 125

Thr Trp Leu Val Ala Ser Met Ala Arg Leu Pro Leu Ala Glu Ala Ser  
130 135 140

Cys Glu Leu Ile Ala Ser Val Phe Ser Pro Ile Asp Trp Asn Glu Ala  
145 150 155 160

Val Arg Val Leu Ala Pro Gly Gly Val Leu Arg Leu Gly Pro Ala  
165 170 175

Ser Ala His Leu Leu Glu Leu Arg Gln Arg Leu Tyr Asp Asp Val Arg  
180 185 190

Asp Tyr Ala Asp Asp Lys His Leu Ala Gly Leu Pro Ala Pro Leu Ser  
195 200 205

Leu Arg His Thr Glu Thr Leu Ser Phe Arg Leu Ala Leu Asp Ser Tyr  
210 215 220

Glu Ala Arg Glu Asn Leu Leu Ala Met Thr Pro His Gly Trp Arg Val  
225 230 235 240

Asn Ala Glu Arg Arg Ala Arg Ile Leu Ala Glu Pro Phe Glu Val Ser  
245 250 255

Val Ala Val Arg Tyr Asp Trp Leu Gln Arg Asp  
260 265

<210> 7  
<211> 280  
<212> PRT  
<213> *Streptomyces fradiae*

<400> 7

Met Arg Lys Asn Val Val Arg Tyr Leu Arg Cys Pro His Cys Ala Ala  
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Pro Leu Arg Ser Ser Asp Arg Thr Leu Arg Cys Glu Asn Gly His Thr  
20 25 30

Phe Asp Val Ala Arg Gln Gly Tyr Val Asn Leu Leu Arg Arg Pro Thr  
35 40 45

Lys Leu Ala Ala Asp Thr Thr Asp Met Val Ala Ala Arg Ala Ala Leu  
50 55 60

Leu Asp Ser Gly His Tyr Ala Pro Leu Thr Glu Arg Leu Ala Gly Thr  
65 70 75 80

Ala Arg Arg Ala Ala Gly Ala Gly Ala Pro Asp Cys Val Val Asp Ile  
85 90 95

Gly Gly Gly Thr Gly His His Leu Ala Arg Val Leu Glu Glu Phe Glu  
100 105 110

Asp Ala Glu Gly Leu Leu Leu Asp Met Ser Lys Pro Ala Val Arg Arg  
115 120 125

Ala Ala Arg Ala His Pro Arg Ala Ser Ser Ala Val Ala Asp Val Trp  
130 135 140

Asp Thr Leu Pro Leu Arg Asp Gly Ala Ala Met Ala Leu Asn Val  
145 150 155 160

Phe Ala Pro Arg Asn Pro Pro Glu Ile Arg Arg Ile Leu Arg Pro Gly  
165 170 175

Gly Thr Leu Leu Val Val Thr Pro Gln Gln Asp His Leu Ala Glu Leu  
180 185 190

Val Asp Ala Leu Gly Leu Leu Arg Val Arg Asp His Lys Glu Gly Arg  
195 200 205

Leu Ala Glu Gln Leu Ala Pro His Phe Glu Ala Val Gly Gln Glu Arg  
210 215 220

Leu Arg Thr Thr Leu Arg Leu Asp His Asp Ala Leu Gly Arg Val Val  
225 230 235 240

Ala Met Gly Pro Ser Ser Trp His Gln Asp Pro Asp Glu Leu Ala Arg  
245 250 255

Arg Ile Ala Glu Leu Pro Gly Ile His Glu Val Thr Leu Ser Val Thr  
260 265 270

Phe Thr Val Cys Arg Pro Leu Pro  
275 280

<210> 8  
<211> 282  
<212> PRT  
<213> *Bacillus subtilis*

<400> 8

Met Lys Arg Thr Val Asp Phe Ser Met Phe Arg Cys Pro Leu Cys Asp  
1 5 10 15

Ser Ser Met Asp Ala Ala Ser Gly Lys Ser Leu Ile Cys Thr Glu Arg  
20 25 30

Gly His Thr Phe Asp Leu Ser Arg His Gly Tyr Val Asn Phe Leu Thr  
35 40 45

Lys Pro Val Lys Thr Ser Tyr Gly Ala Glu Leu Phe Glu Ala Arg Ser  
50 55 60